

## **EXECUTIVE SUMMARY**

### **Introduction**

Fort Belvoir (the Post) is an historic and active United States Army installation located in northern Virginia, approximately 5 miles south of Alexandria. The Post is proposing to perform maintenance dredging of the Dogue Creek Marina basin and the access channel from the marina to the Potomac River. The Post is also proposing to replace an existing potable waterline beneath Dogue Creek within the proposed dredge area and to replace the existing marina in-stream facilities.

This environmental assessment was prepared, pursuant to the National Environmental Policy Act (NEPA) of 1969 (as amended), the regulations of the President's Council on Environmental Quality (CEQ) for NEPA compliance, and Army Regulation (AR) 200-2, "Environmental Effects of Army Actions," which implements NEPA and CEQ regulations, to evaluate the Proposed Action and reasonable alternatives, and their effects on the natural and human environment.

### **The Proposed Action**

The Proposed Action includes maintenance dredging of the Dogue Creek Marina and an access channel with a bottom width of 40 ft. The access channel would be approximately 6,600 ft long and lead to the Potomac River. The proposed project depth is 6 foot relative to mean low water (MLW) (5 foot deep channel plus one foot overdredge allowance). The marina and the access channel would be dredged mechanically and the dredged material would be placed on barges and transported to Possum Point, approximately 15 miles down river. The dredged material would then be off-loaded from the barges at Dominion's Possum Point facility, placed in watertight trucks, and transported to a Virginia Department of Environmental Quality (VDEQ) permitted placement facility owned by Dominion. The distance between the off-loading site and the placement site is approximately 1 mile. Approximately 93,000 cubic yards of dredged material and associated water (75,000 cubic yards of sediment, 18,000 cubic yards of water) would be removed from the Dogue Creek Marina and the access channel, transported to Possum Point via barges, and placed in the placement site owned by Dominion.

The Proposed Action also includes the horizontal directional drilling (HDD) of a replacement water line beneath Dogue Creek at the same location as an existing waterline, only deeper, and the replacement of the in-stream facilities of the marina.

### **Alternatives to the Proposed Action**

Several alternatives to the Proposed Action were considered during the planning process, which included a feasibility assessment. The feasibility assessment addressed the logistics, engineering complexity, sociopolitical constraints, schedule, costs, and possible environmental impacts associated with the various components and options associated with the dredging of the Dogue Creek Marina and the access channel to the Potomac River.

The variables associated with the dredging of the marina and the access channel included the method of dredging (mechanical versus hydraulic), the location of possible off-loading sites, the method of transport of the dredged material (trucking versus barging versus pumping), the haul routes from the off-loading sites to the placement sites, and the location of the placement sites for the dredged material. These variables were examined for four sites: the Open Burn/Open Detonation (OB/OD) Site at Training Area 6A (T-6A), the Training Area 9 (T-9) Site, the Engineering Proving Ground (EPG) Test Track Site, and the EPG Thin Lift Placement Site. The following possible placement alternatives were considered: OB/OD Site at T-6A – hydraulic dredging and pumping, OB/OD Site at T-6A – mechanical dredging and trucking, T-9 Site, EPG Test Track Site, EPG Thin Lift Site, and the No Action Alternative. Table ES-1 provides a summary of the alternatives.

## **Analysis of Affected Environment and Environmental Consequences**

The potential alternative options were selected based on field reconnaissance studies, engineering considerations, environmental impacts, sociopolitical issues, cost, and schedule constraints and implications. Each alternative was then analyzed for potential environmental consequences, including geology and soils; topography and drainage; climate; air quality; aquatic resources; terrestrial resources; rare, threatened, and endangered species; prime and unique farmlands; designated natural areas; cultural resources; hazardous substances; infrastructure; noise; aesthetics and visual resources; and socioeconomic consequences.

## **Conclusions**

### ***Consequences of the Proposed Action***

#### **Maintenance Dredging**

The Proposed Action would cause short-term, temporary impacts to water quality, including an increase in turbidity due to suspended sediment, potential release of minimal amounts of ammonia, and local changes to dissolved oxygen levels. These impacts would not be expected to adversely affect submerged aquatic vegetation (SAV) or aquatic habitat.

Shallow water and bottom habitats for fish, SAV, and benthic communities would be disturbed by the dredging activities of the Proposed Action. Most fish would be expected to move away from these activities; however, juvenile and larval fish could be permanently adversely affected. The SAV and benthic communities would be removed by the dredging, but would be expected to return to the area after dredging is complete.

The Proposed Action would cause short-term, temporary impacts to air quality through elevated emissions during transport of dredged material. There also would be short-term, temporary impacts to noise levels during operations.

Tug boats and barges used for the dredging operations could affect water quality by introducing chemicals and oils into the water, and could also temporarily affect air quality and noise.

The maintenance dredging operation within Dogue Creek will have a short-term negative impact to bald eagle nesting, roosting, and foraging activity. Post construction could have a long-term negative impact to bald eagles in the vicinity of Dogue Creek. Increased usage of the Dogue Creek Marina and access channel by recreational boaters after maintenance dredging “may affect” bald eagles in the vicinity of Dogue Creek, but through implementation of proposed conservation measures the project “is not likely to adversely affect” bald eagles. Fort Belvoir is in the process of consulting with the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act. Fort Belvoir is committed to comply with the outcome of the consultation process.

### **Waterline Replacement**

The waterline replacement project would take place in upland sites that have been previously disturbed. There would be no disturbance of Dogue Creek as a result of this project.

### **Marina Replacement**

The marina replacement project could cause short-term, temporary impacts to water quality, including increased turbidity, as well as short-term, temporary impacts to noise resulting from construction activities.

### ***Mitigation and Monitoring***

The dredging window (approximately 138 days, from October 1<sup>st</sup> to February 15<sup>th</sup>) has been designed so that dredging activities would be completed during the least sensitive time of year for vulnerable species, including anadromous fish and SAV. Best management practices, including sediment and erosion control, would be employed during all phases of the Proposed Action to be protective of natural resources. Silt fences would be erected around the water line replacement site and the disturbed areas would be re-graded and re-seeded at the end of the project.

Conservation measures have been proposed to minimize effects on bald eagles. These measures include educating marina users to the sensitivity and importance of the Dogue Creek, Pohick Bay, Accotink Bay, and Potomac River shorelines for roosting, foraging, and nesting of bald eagles. Conservation measures also would include signs to warn boaters that landing and accessing the shoreline are prohibited. Continued use of the Fort Belvoir Bald Eagle Management Plan by post employees also would mitigate many of the negative effects this project potentially could have on bald eagles in the future.

Monthly discharge monitoring reports are due to VDEQ as part of Dominion Generation’s Virginia Pollutant Discharge Elimination System (VPDES) permit for Ash Pond D at Possum Point. Dominion is responsible for completing these reports and submitting them to VDEQ.

### ***Irreversible and Irretrievable Commitments of Resources***

The Dogue Creek Marina is an existing, active marina. The Proposed Action includes the maintenance dredging of the marina and the access channel to restore full function of the facility. If the marina and access channel are not restored to previously authorized depths, the marina would fail and the facility likely would be abandoned.

### ***Unavoidable Adverse Effects***

Unavoidable adverse effects associated with the Proposed Action include the possible disturbance of bald eagles during dredging operations, temporary impact to water quality caused by the turbidity in Dogue Creek during dredging and marina replacement activities, temporary loss of non-native hydrilla-dominated SAV, temporary adverse impacts to benthic resources within the area to be dredged and the areas immediately adjacent to the proposed dredge area, and minor, temporary impacts to the aesthetics of Dogue Creek. An adverse impact to recreational waterfowl hunting activities would occur within Dogue Creek because a portion of the Dogue Creek shoreline would be closed to hunters during dredging operations. The Dogue Creek Marina would be unavailable during the dredging and marina replacement activities and, therefore, the Proposed Action would create an additional adverse impact on recreation at the Post; however, the result of the Proposed Action would be a long-term positive impact to recreational boating for the Fort Belvoir community.

### ***Cumulative Impacts***

The restoration of previous function to the marina and the access channel could increase the usage of Dogue Creek and the adjacent Potomac River by recreational boaters. This increase, along with a general increase in access along the Potomac River, could cause adverse impacts to water and air quality, a reduction in the quality of the water-based recreational opportunities in the area, and a negative impact to bald eagle nesting, roosting, and foraging activities. The Dogue Creek dredging project would not exacerbate the continuing trend of shoreline development within the region (a major cause of loss of suitable bald eagle habitat) and would not have a cumulative effect on the population in the Action Area.

### ***Consequences of the No Action Alternative***

The lack of full functionality of the marina due to insufficient water depths would continue and eventually worsen, causing the decline of marina operations and the eventual closing and abandonment of the facility.